than eye, line from lateral ocellus to occipital margin ½ diameter of ocellus. Costal cell of hindwing with bristles twice as numerous as in female. Gaster equal in length and width to thorax.

Type locality. Springhill Lake, Prince Georges County, Md.

Holotype. U.S.N.M. No. 69802.

Described from 30 females and 28 males, as follows: Type female, allotype male, and 21 female, 20 male paratypes reared October 16–30, 1967, from pupae of *Forcipomyia simulata* Walley, taken from beneath bark of dead trees at Springhill Lake, Prince Georges County, Md., by Lionel Gazeau; 2 female, 2 male paratypes, Nov. 23–29, 1967, from same host and by same collector, Greenbelt, Md.; 4 female, 3 male paratypes, reared from galleries of *Saperda concolor* Lec., June 10–July 21, 1967, Iron Co., Mich., D. Grimble.

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New Exotic Crane-Flies (Tipulidae: Diptera). Part XVI[1]

Charles P. Alexander[2]

The preceding part under this general title was published in Entomological News, Vol. 79(2): 35–43. I here am continuing the discussion of the Hexatomine crane-flies that were collected in Assam, India, by Dr. Fernand Schmid, together with a further species taken in northern Thailand by the late Dr. Deed C. Thurman. All types are preserved in my personal collection through the permission of the collectors.

Limnophila Macquart: Indolimnophila, NEW SUBGENUS

Antennae short, the proximal three or four flagellar segments enlarged, the lower faces protuberant, without verticils, these

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[2] Contribution from the Entomological Laboratory, University of Massachusetts, Amherst, Mass. 01002.

segments closely united or fused; outer segments elongate, the terminal five or six with very long verticils. Praescutum with tuberculate pits apparently lacking; pseudosutural foveae shallow and poorly delimited. Wings without supernumerary crossveins or macrotrichia in the cells; vein R_{2+3+4} short, *m-cu* far distad. Male hypopygium with posterior border of tergite with two low widely separated lobes. Dististyles terminal, outer style setiferous, terminating in a long spine. Interbase a massive blackened head, connected with the gonapophyses, the latter extended into slender points, outer part commonly with appressed spinules, lacking in *benguetana* and *bituminosa*. Aedeagus short, simple.

Type of subgenus.—Limnophila (Indolimnophila) adicia Alexander (Oriental).

Other species include *Limnophila (Indolimnophila) benguetana* Alexander, Luzon; *L. (I.) bituminosa* Alexander, Mindanao; *L. (I.) iota* Alexander, Assam; *L. (I.) iotoides*, new species, Assam; *L. (I.) subguttularis* Alexander, Mindanao, and probably *Limnophila manipurensis* Alexander, Assam, the male of which is unknown. I have still other undescribed species and it seems probable that certain other members of the genus in southeastern Asia will be found to belong to this subgenus.

Certain of the species placed here bear a general resemblance to members of the allied subgenus *Afrolimnophila* Alexander, from which they differ especially in hypopygial structure, particularly the outer dististyle, gonapophysis and aedeagus. The tendency of having ocelliform darkened markings on the wings, as commonly found in *Afrolimnophila*, is scarcely indicated in the present group.

Limnophila (Indolimnophila) iotoides, NEW SPECIES

Size small (wing of male under 5 mm); mesonotal praescutum brownish yellow with dark brown stripes, pleura blackened; antennae with scape and pedicel black, flagellum brownish yellow; wings creamy, with a very abundant brown spotted and dotted pattern; cell M_1 small, *m-cu* lying far distad; male hypopygium with apical point of outer dististyle short; basistyle with apex of inner face pale membranous; interbase terminating in a compact darkened knob.

Male.—Length about 4.5 mm; wing 4.8 mm; antenna about 0.7 mm.

Rostrum and palpi small, black. Antennae with scape and pedicel black, flagellum brownish yellow. Head brownish gray, center of posterior vertex dark brown.

Pronotum large, brownish gray above, more blackened laterally. Mesonotal praescutum brownish yellow, patterned with dark brown, including longitudinal intermediate stripes, the median vitta slightly paler, sublateral stripes and broader lateral margins dark brown; scutal lobes brownish yellow, each with two confluent brown areas, midregion narrowly darkened; scutellum and postnotum brownish black. Pleura blackened. Halteres with stem yellow, apex of knob infuscated. Legs with coxae blackened; trochanters obscure yellow; remainder of legs broken. Wings with ground creamy, with a very abundant brown spotted and dotted pattern in all cells, the larger areas at arculus, origin of *Rs*, anterior cord, and at tips of veins R_3 and R_4, the two latter confluent with other subterminal darkenings so the wing apex is chiefly dark, interrupted by small spots of the ground; brown dots more abundant than in *iota*, including a complete series in cells *Cu* and Cu_1, vein Cu_2 unusually distinct; veins obscure yellow in the ground areas, slightly darker in the markings. Costal fringe of male relatively short; macrotrichia of longitudinal veins beyond cord, lacking on those before cord and behind *R*. Venation: Sc_1 ending shortly beyond fork of *Rs*, Sc_2 near its tip; vein R_2 faint to virtually lacking; cell M_1 small, about two-fifths its petiole; *m-cu* far distad, about one-half its length before fork of M_{3+4}.

Abdomen brownish black, including the hypopygium, the bases of the sternites a little paler. Male hypopygium with the posterior emargination of tergite rounded, lobes obtuse. Basistyle with mesal face near apex with pale membrane; interbase terminating in a short compact darkened knob. Outer dististyle with apical point short. Gonapophysis long produced beyond the appressed spinules.

Habitat.—ASSAM. *Holotype:* ♂, Khanggoi, Manipur, 4,828 feet, July 16, 1960 (Fernand Schmid).

The most similar described species in *Limnophila* (*Indolimnophila*) *iota* Alexander, which differs in the wing pattern and in the structure of the male hypopygium, particularly the basistyle, interbase, and outer dististyle.

Limnophila (Afrolimnophila) piceipes, NEW SPECIES

General coloration of head and thorax gray, praescutum with four pale brown stripes; legs black, only the femoral bases yellowed; wings pale yellow with numerous pale brown dots and a virtually complete brown band at cord; three confluent ocelliform markings at near midlength of the outer radial field, the largest with its center on vein R_5.

Male.—Length about 9–10 mm; wing 8–9 mm; antenna about 1.7–1.8 mm.

Female.—Length about 10–11 mm; wing 9–10 mm.

Rostrum relatively long, brownish gray, sloping directly to the front without an angulation; palpi dark brown. Antennae brownish black; proximal flagellar segments of male enlarged beneath, as in the subgenus, outer segments progressively smaller, with conspicuous verticils and dense white setulae. Head light gray with a sparse yellow pollen.

Pronotum brownish gray. Mesonotal praescutum opaque brownish gray with four narrow pale brown poorly indicated stripes; tuberculate pits and pseudosutural foveae darker brown, conspicuous; posterior sclerites of notum gray, centers of scutal lobes very indistinctly patterned with light brown. Pleura brownish gray, dorsopleural membrane buffy. Halteres brownish yellow. Legs with coxae and trochanters dull orange; remainder of legs black, femoral bases broadly yellow, including about one-third to one-fourth of the segment; vestiture of legs relatively long but appressed and inconspicuous. Wings pale yellow with numerous pale brown dots in all cells but less abundant on anterior half of wing, at near midlength of the cells beyond cord with three confluent ocelliform marks extending transversely across the radial field from costa to fork of M_{1+2}, the central one larger; a narrow brown band from stigma across cord, narrowed or barely interrupted at M; a more or less distinct broken band crossing the wing from origin of Rs to tip of vein *2nd A*; cell C with a series of transverse brown dashes; veins light yellow, slightly darker in the patterned areas. Venation: R_{2+3+4} subequal to basal section of R_5; petiole of cell M_1 about one-half the cell; *m-cu* from one-third to three-fourths its length beyond fork of M.

Abdomen brownish gray, sternites only slightly paler, hypopygium brown. Ovipositor with cerci long and slender. Male

hypopygium generally as in other Oriental members of the subgenus; inner dististyle subtriangular in outline, across base almost as broad as long.

Habitat.—ASSAM. Holotype: ♂, Jhum La, Kameng, North East Frontier Agency, 7,800 feet, May 13, 1961 (Fernand Schmid). *Allotype:* ♀, Talung Dzong, Kameng, 7,000 feet, May 12, 1961. *Paratypes:* 4 ♂ ♀, with the allotype: 2 ♂♂, 4 ♀♀, Shergaon, Kameng, 6,400 feet, May 8, 1961; 1 ♂, Domkho, Kameng, 6,900 feet, May 11, 1961.

Limnophila (Afrolimnophila) piceipes is distinguished from all other regional members of the subgenus by the blackened legs. Other species having the wing pattern somewhat comparable include *L. (A.) bicoloripes* Alexander, *L. (A.) perdelecta* Alexander, *L. (A.) pterosticta* Alexander, *L. (A.) raoana* Alexander, and some others.

Limnophila (Afrolimnophila) stenacris, NEW SPECIES

General coloration of mesonotum buffy yellow, pleura darker brown; legs yellow, femora with a vaguely indicated pale brown ring at some distance from tip; wings very pale yellow with an abundant medium brown pattern that includes abundant dots in the cells and three major bands or darkened areas; veins before cord with the exception of costa without trichia; male hypopygium with outer dististyle glabrous, inner style relatively narrow, terminating in a small oval lobe.

Male.—Length about 7.5–8 mm; wing 8–9 mm; antenna about 1.2–1.3 mm.

Female.—Length about 8.5 mm; wing 8.5 mm.

Rostrum brownish black; palpi black. Antennae light brown; structure as in the subgenus, verticils slightly exceeding the segments. Head brownish gray.

Pronotum obscure yellow, pretergites clear light yellow. Mesonotum almost uniformly buffy yellow, praescutal stripes and darkenings on scutal lobes barely indicated; pseudosutural foveae reddened, scarcely evident against the ground; postnotum slightly more pruinose. Pleura darker brown. Halteres with stem dirty white, knob brown. Legs with coxae brownish yellow; trochanters yellow; remainder of legs yellow, femora with a vaguely indicated pale brown subterminal ring, the pale tip more extensive; setae of legs long and pale. Wings with

ground very pale yellow, with an abundant pattern of medium brown, distributed as in the subgenus, contrasting with the ground; dark pattern including numerous dots in all cells and three brown crossbands or darkened concentrations, each including broken ocelli; first band extending from origin of *Rs* to tip of vein *2nd A*, with a large ocellus at *Rs*, second band more restricted to the anterior cord, third area beyond midlength of the outer radial field; veins light brown. Veins beyond cord with macrotrichia, basad of cord lacking, including veins *Sc* and *R*; costal fringe long. Venation: R_{2+3+4} subequal to or about one-half longer than basal section of R_5; cell M_1 about one-third to one-half longer than its petiole; cell *1st* M_2 short; *m-cu* commonly beyond midlength of M_{3+4}, more rarely closer to the base.

Abdomen brown. Male hypopygium with outer dististyle glabrous, long and narrow, outer end curved evenly to an acute point; inner style relatively narrow, the apex a small oval lobe.

Habitat.—ASSAM. *Holotype:* ♂, Nizong, Kameng, North East Frontier Agency, 4,800 feet, June 27, 1961 (Fernand Schmid). *Allotype:* ♀, Nakhu, Kameng. *Paratypes:* 2 ♂♂, with the allotype, 4,800 feet, July 3, 1961; 2 ♂♂, 1 ♀, Nafra, Kameng, 4,000 feet, June 26, 1961 (Schmid).

The most similar regional species include *Limnophila (Afrolimnophila) scabristyla* Alexander, which has the outer dististyle of the hypopygium scabrous, and *L. (A.) pterosticta* Alexander, which has the wing pattern much less contrasted, the ground being more yellowed and the darkened pattern paler brown, and with the male hypopygium, particularly the dististyles, quite distinct.

Limnophila (Dicranophragma) brachyclada, NEW SPECIES

Allied to *venustipennis;* wings whitened, with a restricted pale brown pattern, the darkened marginal seams restricted virtually to the veins, not forming subterminal clouds across the outer radial and medial cells.

Male.—Length about 5.5 mm; wing 7 mm.

Rostrum and palpi black. Antennae with the scape and pedicel dark yellow, proximal three flagellar segments paler yellow, succeeding segments dark brown with very elongate verticils. Head brownish gray.

Pronotal scutum dark brown, scutellum yellowed. Mesonotum almost uniformly brownish yellow, the praescutal stripes not differentiated, the humeral and broad lateral borders brown, pseudosutural foveae pale; postnotum with dorsal pleurotergite and lateral borders of mediotergite darker. Pleura dark brown, vaguely patterned with more brownish yellow areas, including the dorsopleural region. Halteres yellow, knob vaguely more darkened. Legs with coxae brownish yellow; trochanters brown; femora pale brownish yellow, tip narrowly clearer yellow, remainder of legs light yellow. Wings whitened, prearcular and costal fields slightly more yellowed; a restricted pale brown pattern including four narrow costal areas, the first near arculus, sending a narrow spur into cell *M*; second area at origin of *Rs*, very narrowly reaching costa, widened posteriorly and attaining *M*, darker in cell *Sc*; third dark area largest, including the stigma and a confluent seam backward over the cord where it is very narrow; fourth area at end of vein R_3 and over the supernumerary crossvein; other wing darkenings include a spot at end of vein R_4 and very reduced marginal seams at ends of all outer veins excepting R_5, with comparable darkenings over outer end of cell *1st* M_2 and fork of M_{1+2}; a narrow seam over spur of vein *2nd A*, reaching the margin; much paler to scarcely indicated darkened washes in cells *M* and *Cu*; veins yellow, light brown in the patterned areas, darkest in cell *Sc*. In *venustipennis* the wing pattern is much darker and clearly defined, beyond the cord with the marginal seams extended cephalad into the cells to form subterminal clouds. Wings widest opposite termination of vein *2nd A*. Venation: Supernumerary crossvein in cell R_3 subequal in length to vein R_3 beyond it; vein *2nd A* with a spur backwards into the cell, as in *venustipennis*.

Abdomen dark brown, sternites and hypopygium paler.

Habitat.—ASSAM. *Holotype:* ♂, Serrarim, Khasi-Jaintia Hills, 5,500 feet, October 7, 1960 (Fernand Schmid).

In the possession of a conspicuous spur on vein *2nd A* of the wings the present fly is most similar to *Limnophila* (*Dicranophragma*) *venustipennis* Alexander (*pulchripennis* Brunetti, preoccupied), differing most evidently in the restricted darkened wing pattern, as described.

Limnophila (Dicranophragma) palassoptera, NEW SPECIES

Mesonotal praescutum dark brown with four gray stripes; antennae with first flagellar segment light yellow; wings whitish, with abundant brown spots and dots; supernumerary crossvein in cell R_3 far distad, cell *1st* M_2 small, subquadrate to subrectangular in shape.

Male.—Length about 6.5 mm; wing 6.5 mm; antenna about 1.4 mm.

Female.—Length about 8.5 mm; wing 7 mm.

Rostrum black, sparsely pruinose; palpi black. Antennae with scape and pedicel black, first flagellar segment light yellow, remaining segments brown, outer segments progressively longer, verticils of intermediate segments longer. Head brownish gray.

Pronotal scutum brownish gray, scutellum yellow. Mesonotal praescutum dark brown with four gray stripes, the ground color including a central line and a ∩-shaped area enclosing the lateral stripe, anterior border and pseudosutural foveae more blackened; posterior sclerites of notum brown, sparsely pruinose, scutal lobes slightly darkened. Pleura gray, patterned with dark brown; dorsopleural membrane yellowed. Halteres pale, margin of knob narrowly darkened. Legs with coxae brownish black, sparsely pruinose; trochanters brown; femora yellowed with vague indications of a more darkened ring immediately before the yellow tip. Wings whitened, with abundant brown spots and dots, stigmal area largest; cells *C* and *Sc* with several transverse lines that cross the cells, more numerous in cell *C;* large paler brown clouds at origin of *Rs*, anterior cord and tip of vein R_3; all other cells with abundant small light brown dots, on the disk chiefly isolated, in the marginal cells tending to become confluent, darkened spot at end of vein *2nd A* small; veins brown. Male with costal fringe and vein trichia long and conspicuous, somewhat shorter in the female; wings of both sexes normal, not dilated in male as in various other species. Venation: Sc_1 long, about one-half longer than R_{2+3+4}; R_{1+2} about twice R_2; supernumerary crossvein in cell R_3 far distad, the vein longer than the last section of vein R_3, in cases more than twice this length; cell *1st* M_2 small, short subrectangular to subquadrate, with *m-cu* at or beyond midlength of cell.

Abdominal tergites dark brown, basal sternites paler, in male posterior borders of sternites narrowly darkened, in the female the incisures narrowly yellowed. Male hypopygium with outer dististyle slender, narrowed very gradually to the blackened feebly bidentate tip.

Habitat.—Thailand.

Holotype: ♂, Doi Chom Cheng, at the Lemmon Cabin, 3,000 feet, February 13, 1953 (Deed C. Thurman). *Allotopotype:* ♀, February 16, 1953. *Paratopotype:* ♂, with the allotype.

Limnophila (*Dicranophragma*) *palassoptera* is generally similar to *L.* (*D.*) *distans* Edwards and *L.* (*D.*) *remota* (de Meijere), differing in the body coloration and in details of wing coloration and venation.

A New Oryid Genus and Species from Africa, with Generic Key and Notes on Evolution within the Family Oryidae (Chilopoda: Geophilomorpha) [1]

R. E. Crabill, Jr.[2]

The Oryidae are exclusively pantropical, the great majority occurring abundantly in the New World tropics and in Africa. Elsewhere they are known only in Asia by *Pentorva indica* Silvestri, *Nycternyssa stheno* Crabill, and by *Orphnaeus brevilabiatus* (Newport), a tramp species recorded from the world tropics.

The impact of evolution upon the Oryinae is, I believe, reflected in a number of morphological tendencies, most of which appear to be proceeding in a parallel manner. The ultimate leg's double tarsus in some genera has become single through amalgamation. In all genera the ultimate pedal segment has clearly undergone substantial reduction: this is best seen in the small, glandless coxopleuron. In most genera the second maxillary claw is bihispidate, but in a few the claw, having lost its filaments, is secondarily plain. Some genera are notably polypodal (e.g. *Orya*), whereas others are relatively eurypodal (e.g.

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